



Fermilab

Mu2e Remote Handling Requirements

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1. Overview

The Mu2e [1] Remote Handling System will be used to replace the production target and other secondary devices. This document describes top-level requirements for this device.

2. Requirements

2.1. General requirements

- 2.1.1. The remote handling shall provide safe handling methods, equipment, and facilities to support target hall component replacement and short-term storage.
- 2.1.2. The remote handling shall incorporate ALARA (As Low As Reasonably Achievable) principles into equipment and procedures.
- 2.1.3. The remote handling shall be integrated into the infrastructure of the complex both underground and above ground

2.2. Devices

- 2.2.1. Vacuum Window(s): Remote Handling systems shall be designed to replace the vacuum window(s) from the production solenoid remotely.
- 2.2.2. Production Target: Remote Handling systems shall be designed to remove the production target from the production solenoid remotely. This activity must be performed in less than one month, and may occur on a yearly basis.
- 2.2.3. Pbar Absorber: Remote Handling systems shall be designed to remove the Pbar absorber from the production solenoid remotely.

References

1. Mu2e-doc-4299, Chapter 4, Mu2e TDR.
2. Mu2e-doc-48, Mu2e Numbers, C. Dukes, Jan. 2012.
3. The Concentration Model Revisited, J. D. Cossairt, A. J. Elwyn, P. Kesich, A. Malensek, N. Mokhov, and A. Wehmann, Fermilab EP Note 17, June 24, 1999.
4. Fermilab Radiological Control Manual, D. Cossairt, <http://esh.fnal.gov/xms/ESHQ-Manuals/FRCM>, Oct 2013.
5. Mu2e-doc-1529-v2, Mu2e Accelerator Systems Interface Document, V. Nagaslaev, March 2012.
6. Mu2e-doc-2024, Extinction Monitor Status, P. Kasper, Jan 2012.